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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/530,600

08/29/2005

Christophe Laurent

53.0029-PCT-US

7175

28116

7590

11/08/2006

EXAMINER

MCELHENY JR, DONALD E

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ART UNIT

PAPER NUMBER

2857

DATE MAILED: 11/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/530,600

Applicant(s)

LAURENT ET AL.

Examiner

Donald E. McElheny, Jr.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 August 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>April 07, 2005</u> . | 6) <input type="checkbox"/> Other: ____.  |

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.
2. The disclosure is objected to because of the following informalities: Section headings should be added in accordance with below arrangement list.

Appropriate correction is required.

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use. The missing section headings should be added.

#### **Arrangement of the Specification**

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.
  - (1) Field of the Invention.
  - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

3. It is noted that this application appears to claim subject matter disclosed in prior Application No. 60/416,507, filed 10/07/2002, as well as other claimed priority upon foreign applications. A reference to the prior application must be inserted as the first sentence(s) of the specification of this application or in an application data sheet (37 CFR 1.76), if applicant intends to rely on the filing date of the prior application under 35 U.S.C. 119(e), 120, 121, or 365(c). See 37 CFR 1.78(a). For benefit claims under 35 U.S.C. 120, 121, or 365(c), the reference must include the relationship (i.e., continuation, divisional, or continuation-in-part) of all nonprovisional applications. If the application is a utility or plant application filed under 35 U.S.C. 111(a) on or after November 29, 2000, the specific reference to the prior application must be submitted during the pendency of the application and within the later of four months from the actual filing date of the application or sixteen months from the filing date of the prior application. If the application is a utility or plant application which entered the national stage from an international application filed on or after November 29, 2000, after compliance with 35 U.S.C. 371, the specific reference must be submitted during the pendency of the application and within the later of four months from the date on which the national stage commenced under 35 U.S.C. 371(b) or (f) or sixteen months from the filing date of the prior application. See 37 CFR 1.78(a)(2)(ii) and (a)(5)(ii). This time period is not extendable and a failure to submit the reference required by 35 U.S.C. 119(e) and/or 120, where applicable, within this time period is considered a waiver of any benefit of such prior application(s) under 35 U.S.C. 119(e), 120, 121 and 365(c). A benefit claim filed after the required time period may be accepted if it is accompanied by

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a grantable petition to accept an unintentionally delayed benefit claim under 35 U.S.C. 119(e), 120, 121 and 365(c). The petition must be accompanied by (1) the reference required by 35 U.S.C. 120 or 119(e) and 37 CFR 1.78(a)(2) or (a)(5) to the prior application (unless previously submitted), (2) a surcharge under 37 CFR 1.17(t), and (3) a statement that the entire delay between the date the claim was due under 37 CFR 1.78(a)(2) or (a)(5) and the date the claim was filed was unintentional. The Director may require additional information where there is a question whether the delay was unintentional. The petition should be addressed to: Mail Stop Petition, Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

If the reference to the prior application was previously submitted within the time period set forth in 37 CFR 1.78(a), but not in the first sentence(s) of the specification or an application data sheet (ADS) as required by 37 CFR 1.78(a) (e.g., if the reference was submitted in an oath or declaration or the application transmittal letter), and the information concerning the benefit claim was recognized by the Office as shown by its inclusion on the first filing receipt, the petition under 37 CFR 1.78(a) and the surcharge under 37 CFR 1.17(t) are not required. Applicant is still required to submit the reference in compliance with 37 CFR 1.78(a) by filing an amendment to the first sentence(s) of the specification or an ADS. See MPEP § 201.11.

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. Claims 1-10, and 14-22 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter and the claimed invention lacks patentable utility.

Please be advised that the "Interim Guidelines for Examination of Patent Applications for Subject Matter Eligibility" was signed on Oct 26, 2005 and posted on the uspto.gov website. This updates the former Guidelines practice for computer based and algorithm based inventions. The link is:

<http://www.uspto.gov/web/offices/pac/dapp/ogsheet.html>

Also see MPEP 2106, which, though may be outdated and superseded by the above, still covers many computer implemented inventions and the manner in which they may be claimed and find statutory basis under 35 U.S.C. 101.

While the claims do not necessarily always positively and clearly recite and require any actual computer implementation, even if/when there were such claimed basis they would still fail to meet the updated Guidelines criteria for having statutory basis in any type (e.g. method, apparatus, medium, etc.) of claimed invention as the instant claims stand.

These claims fail to meet the minimal requirement of a useful, concrete and tangible result of a real physical world interactive end result supported by any algorithm steps, or structure supporting such calculated step with an end result, where the end result limitation/data supports the invention being used in a practical useful, concrete and tangible real world combination manner. That "end result" being the implementation of the inventive gist which is normally the last step of the inventive

algorithm, or here claimed being the use of the first and second parameter value data and their external useful concrete and tangible relationship(s). As the above updated Guidelines now state, structure (e.g. input devices, sensors, databases, etc.) of any type that supply data for calculations (done by human and/or computer) do not make the claimed invention fall within statutory subject matter until there occurs explicitly a claiming of and meeting the actualization in the real world of a useful, concrete and tangible result.

Note that algorithmic based inventions, especially mathematical or abstract ideas based, where performed using a computer, such computerization still may not make an overall computerized system fall into permitted patentable statutory subject matter. The instant claims fail to explicitly and clearly set forth any end result physical world transformation of any data calculations so as to relate to the real world as/for a tangible practical use. The step(s) may still be at best just internal computer calculations absent any tangible real world relationship. External supply to other structural systems, to a user via display or printing, or some other practical tangible result with the clear useful purpose of such "output", must somehow be minimally claimed for establishing statutory subject matter.

Note that claims 11, 12, and 13 call for displaying of one of the parameter values, not all. Such is deemed statutory by the 101 Help Panel reviewers as at least one data value of the claimed combination has been displayed. However, note that where only the third parameter value is displayed, as in dependent claim(s), such does not require the first or second parameter value of parent claim 1 to be displayed to make the final

result of parent claim 1 to finally be made into a statutory useful, concrete and tangible basis. Also note dependent claims including a computer, or apparatus, or storage medium holding the program to carry out the steps, are also deemed to still remain non-statutory as failing to complete at least one of the algorithm's computations as a useful, concrete and tangible result of statutory nature. The various apparatus means are just the artful use of claim language to claim the software based algorithm method, and as dependent claims even admit such are implemented by the software program. Therefore the inventive algorithm is the invention which must find explicit claimed support to meet the Guidelines criteria for statutory subject matter.

6. The following is a quotation of the second and fourth paragraphs of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Subject to the following paragraph, a claim in dependent form shall contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed. A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers.

7. Claims 1-12, and 14-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The bodies of the independent claims, as well as the dependent claims not rejected under 35 U.S.C. 101 above, appear to never completely recite the complete invention and its statutory gist of the algorithmic relationships where the final step is utilized for some purpose such as displaying of some result. According to the updated Guidelines, the ultimate result of an algorithmic based invention must be found explicitly



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recited and claimed in a useful, concrete and tangible real world interactive result. See the above 101 rejection remarks. The claims are therefore deemed incomplete and failing to completely recited the required minimum invention that would constitute a statutory subject matter basis.

Claims 1-12 and 14-22 are also deemed indefinite and incompletely reciting the invention as to where and what constitutes the inventive gist of "processing seismic data" as the independent claims' preambles so state the invention is directed. The bodies of these and dependent claims appear to never clearly state where any modification or processing occurs of the initial existing various seismic data. At best there is processing of data associated with this initial set(s) of seismic data, not the seismic data itself. Claim 13 is the only claim that clearly and explicitly does anything to any seismic data to be considered to meet "processing seismic data". Dependent claims of the above do not resolve their problems, and likewise fall for the same reasons.

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 1-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krebs (6,002,642).

While the Krebs reference does not make use of identical language and explicit expression of various signal components, such as "look-up table" or pp type seismic data components, such are nevertheless found fully and equivalently taught by the reference in its teachings. For example, the claimed plural look-up tables are met by the teachings of the tables that are used for error correction of the various types of seismic data signal components, and the teaching that the taught techniques may be applied to the other types of seismic data, from 2D to 3D datasets, offset data and thus their plural data subsets for each coordinate direction, to the P-waves, S-waves, and converted waves (i.e. which would include the claimed "pp" travel time waves), and to the plural substrata data components (such as location and dip image data) associated to the seismic data. Hence there would be plural, including three or more of these various data component sets and tables, that are associated data to the gathered seismic survey data. These tables are accessed (i.e. looked up for their associated values) per the signal processing requirements of the seismic data processing algorithm. Also, while not explicitly stated, the results are presented in the standard modes for display to users, and the figures in the reference are even examples of

displayed data meeting the claimed data display. Also the computer system is not explicitly shown or discussed, such and the program and its holding storage medium for the taught algorithm control of such standard computer are what the taught computations would be implemented by, and computer computation times and costs are indeed discussed in the reference. When the portion of the processed seismic data and substrata model data are displayed, they are a portion of the total computed data and final developed model, and hence meet the claimed criteria of displaying and emphasizing (i.e. "highlighting a portion" of claim 13) in the displayed image a portion of the total seismic trace; note if "highlighting" means anything other than its broadest possible interpretation as permitted in ordinary language, then such should be explicitly claimed and shown supported in applicants' original disclosure as filed -- however, such techniques of using color or shading for geologic or data features emphasis were already notoriously well known for such further purposes.

Since the variations in claim language do not involve the concept of invention, as exemplified above, and the reference covered such variations as its disclosure was adequate enough teachings to one of ordinary skill in the art at the time of filing of applicants' application to make, use and cover the claimed invention, such claimed invention would therefore have been obvious and does not involve any inventive concept nor novelty.

11. The remaining prior art cited, and that brought to attention by applicants in their IDS, is of pertinence in meeting the claimed invention in part or whole. Applicants should state for the record where any claimed inventive features define over the prior

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art, especially including those references the foreign patent offices deem also meet the corresponding claims.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donald McElheny, Jr. whose telephone number is 571-272-2218. The examiner can normally be reached on Monday-Thursday from 7:30 to 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoff Marc, can be reached on weekdays at telephone number 571-272-2216. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Donald E. McElheny, Jr.  
Primary Examiner  
Art Unit 2857